

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Currently amended): A welding system including:

a wire feeding unit which feeds a welding wire to a welding torch;

an actuator which holds the welding torch and moves the welding torch;

a controller which has a position control system and drive-controls the actuator; and

a welding power supply unit which applies weld output between a workpiece and the welding wire, wherein the welding torch is moved by the actuator in a direction separating from the workpiece thereby to control the velocity of the welding wire for the workpiece; and

the controller includes, separately from the position control system, a dedicated separation control system which moves the actuator in the direction where the welding torch is separated from the workpiece; and

the dedicated separation control system is always connected to the position control system, and the controller outputs a

velocity command relating to a welding torch pull-up operation to the dedicated separation control system only when the welding torch is moved in the direction separating from the workpiece.

Claim 2 (Original): The welding system according to claim 1, wherein the separation control system performs feedforward control.

Claim 3 (Cancelled)

Claim 4 (Currently amended): A method of preventing erroneous collision detection within a multi-articulated robot driven through a reduction gear by a motor utilizing the ~~The welding system according to claim 1, including a multi-articulated robot driven through a reduction gear by a motor, the system adapting a method of detecting collision of the multi-articulated robot~~ comprising the steps of:

sensor-less detecting external force due to collision by subtracting a kinetic torque obtained by an inverse kinetic calculation of a robot from a torque outputted to the reduction gear by the motor;

judging that an arm has received the external force in case that the detected value of the external force is greater than a predetermined threshold[[,]]; and

increasing the threshold for detection of collision to lower collision detecting sensibility in case that a command acceleration of the robot operation is greater than a predetermined value.

Claim 5 (Original): The welding system according to claim 4, wherein the threshold for detection of collision is increased, and this state where the threshold is increased is kept for the predetermined time in case that the command acceleration of the robot operation is greater than the predetermined value.

Claim 6 (Currently amended): A consumable electrode type welding method, which, by means of a welding system including a wire feeding unit which supplies a welding wire to a welding torch, an actuator which holds the welding torch and moves the welding torch, a controller which has a position control system and drive-controls the actuator, and a welding power supply unit which applies weld output between a workpiece and the welding wire, moves the welding torch by the actuator in a direction separating from the workpiece, thereby to control the velocity of the welding wire for the workpiece, in that the controller includes, separately from the position control system, a dedicated separation control system for moving the actuator in

the direction where the welding torch is separated from the  
workpiece; and

the dedicated separation control system is always connected  
to the position control system, and a velocity command relating  
to a welding torch pull-up operation is outputted to the  
dedicated separation control system only when the welding torch  
is moved in the direction separating from the workpiece.

Claim 7 (Original): The consumable electrode type welding method  
according to claim 6, wherein the separation control system  
performs feedforward control.

Claim 8 (Cancelled)

Claim 9 (Currently amended): The consumable electrode type  
welding method according to claim 6, wherein a multi-articulated  
robot, which is driven through a reduction gear by a motor, is  
used to prevent erroneous collision detection, the method  
comprising the steps of:

sensorless detecting external force due to collision by  
subtracting a kinetic torque obtained by an inverse kinetic  
calculation of a robot from a torque outputted to the reduction  
gear by the motor; judging that an arm has received the external

force in case that the detected value of the external force is greater than a predetermined threshold; and

increasing the threshold for detection of collision to lower collision detecting sensibility in case that a command acceleration of the robot operation is greater than a predetermined value.

Claim 10 (Currently amended): The consumable electrode welding method according to claim [[8]] 6, in case that the command acceleration of the robot operation is greater than the predetermined value, the threshold for detection of collision is increased, and this state where the threshold is increased is kept for the predetermined time.

Claim 11 (New): The welding system according to claim 1, wherein the welding torch is moved by the actuator in the direction separating from the workpiece while the welding is fed toward the workpiece.

Claim 12 (New): The welding system according to claim 1, wherein the controller continues to output the velocity command relating to the welding torch pull-up operation to the dedicated separation control system until the welding torch is moved in a

predetermined height after the welding wire contacts the workpiece.

Claim 13 (New): The welding system according to claim 1, wherein the velocity command relating to the welding torch pull-up operation outputted to the dedicated separation control system is separate from a velocity command in a usual operation outputted to the position control system.

Claim 14 (New): The consumable electrode welding method according to claim 6, wherein the welding torch is moved by the actuator in the direction separating from the workpiece while the welding is fed toward the workpiece.

Claim 15 (New): The consumable electrode welding method according to claim 6, wherein the velocity command relating to the welding torch pull-up operation continues to be outputted to the dedicated separation control system until the welding torch is moved in a predetermined height after the welding wire contacts the workpiece.

Claim 16 (New): The consumable electrode welding method according to claim 6, wherein the velocity command relating to the welding torch pull-up operation outputted to the dedicated

separation control system is separate from a velocity command in a usual operation outputted to the position control system.